
Rock River Seed & Chemical LLC
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10/12/2021

U.S. Department of Transportation
Docket Management System
1200 New Jersey Ave., SE
Washington, DC 20590

RE: Petition seeking relief under Section 44807 of the FAA Reauthorization Act of 2018

Dear Sir or Madam:

Rock River Seed & Chemical LLC "THE COMPANY" would like to make an AMMENDMENT to a previous petition requesting to conduct Commercial Agricultural Services using the Hylio AG-122 under Docket No. FAA-2021-0117.

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I. Summary

THE COMPANY is requesting amendment to a previously approved exemption under 49 U.S.C. §44807 of the FAA Reauthorization Act of 2018 (P.L. 115-254) to Conduct Commercial Agricultural Services.

Scope of relief includes:

- Amendment to conditions and limitations on previously granted petition: condition 27c

The aircraft will be the Hyllo AG-122. Manuals containing proprietary information for training, maintenance, and operation of the aircraft will be included in support of this petition. This petition explains how THE COMPANY can operate to an equivalent level of safety under the amended extent of relief.

II. Petitioner Information

THE COMPANY Address

Rock River Seed & Chemical LLC
N4584 State Rd 26
Waupun, WI 53963

Contact Information

Caleb Riedeman
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rockriverchemical@gmail.com

About THE COMPANY

Rock River Seed & Chemical LLC is an agricultural supplier of seed and chemicals to farmers across the state of Wisconsin. We have been looking for a way to expand our offering to better service our customers. We decided to purchase drones in order to help our customers produce a more reliable and profitable crop each year.

III. Regulations Petitioner Requests Relief

14 CFR § 91.119(c)	Minimum safe altitudes: General
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IV. Extent of Relief

Additional relief is requested from a common condition/limitation. The relief requested below is intended to match relief granted to DroneXum in Grant 18413A. The condition/limitation Grant 18413A requests relief from is as follows:

“27. All flight operations must be conducted at least 500 feet from all persons who are not directly participating in the operation, and from vessels, vehicles, and structures, unless when operating:

c. Near vessels vehicles and structures. Prior to conducting operations, the operator must obtain permission from a person with the legal authority over any vessels, vehicles or structures that will be within 500 feet of the UA during operations. The PIC must make a safety assessment of the risk of operating closer to those objects and determine that it does not present an undue hazard.”

THE COMPANY requests relief from this condition. THE COMPANY requests that all conditions and limitations in the previous section be followed, and when flying within 500ft the following additional conditions and limitations be followed. THE COMPANY Requests that the FAA not request public comment on its petition because it would not set any precedent and because the relief requested is identical to the already approved petition by DroneXum Exemption No. 18413A, granted previously by the FAA. 14 C.F.R. § 11.87. In addition, THE COMPANY will be utilizing the same proven technologies and mitigations the FAA has already accepted and approved in that exemption.

The new conditions and limitations granted to DroneXum are as follows:

27. All flight operations must be conducted at least 500 feet from all persons who are not directly participating in the operation, and from vessels, vehicles, and structures, unless when operating:

c. Closer than 500 feet from vessels, vehicles and structures. The UA may be operated closer than 500 feet, but not less than 100 feet, from vessels, vehicles, and structures under the following conditions:

- (1) The UAS is equipped with an active geo-fence boundary, set no closer than 100 feet from applicable waterways, roadways, or structures;
- (2) The PIC must have a minimum of 7 hours experience operating the specific make and model UAS authorized under this exemption, at least 3 hours of which must be acquired within the preceding 12 calendar months;
- (3) The PIC must have a minimum of 25 hours experience as a PIC in dispensing agricultural materials or chemicals from a UA;
- (4) The UA may not be operated at a groundspeed exceeding 15 miles per hour;
- (5) The UA altitude may not exceed 20 feet AGL; and
- (6) The PIC must make a safety assessment of the risk of operating closer than 500 feet from those objects and determine that it does not present an undue hazard.

THE COMPANY intends to follow these conditions and limitations as well as other internal protocols. The proprietary ConOps and Risk Assessment & Mitigation Manuals outline these protocols and should provide the support necessary to grant the waiver, and demonstrate how an equivalent level of safety is achieved. A section can be found in each of these documents with specific reference to the under 500ft limitation.

(Hylio AgroDrone CONOPS Manual Page 10)

(Hylio AgroDrone Risk Assessment Manual Page 12)

V. Relief Purpose and Safety Rationale

14 CFR § 91.119(c)

Regulation
<p>Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:</p> <p>(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.</p> <p>(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft</p> <p>(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.</p> <p>(d) Helicopters, powered parachutes, and weight-shift-control aircraft. If the operation is conducted without hazard to persons or property on the surface -</p> <p>(1) A helicopter may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section, provided each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA; and</p> <p>(2) A powered parachute or weight-shift-control aircraft may be operated at less than the minimums prescribed in paragraph (c) of this section.</p>
Why Petitioner is Seeking Relief
<p>This will be very restrictive to spraying with UAS.</p>
Equivalent Level of Safety
<p>During operations with the AG-122 the average altitude will not be more than 10 feet in order to apply the ag products effectively. Due to the configuration of some farms the crop land can be within 500 feet of buildings. An equivalent level of safety for users of the NAS can be achieved because the AG-122/AG-116 will be operated at speeds below 25 mph nearly exclusively over the target treatment area. By keeping the altitude ultra-low and slow during these missions in remote rural areas with the immediate ability to land in a matter of seconds these operations will not add risks to other users of the NAS. It is plausible that on many sorties the vehicle may never need to fly above 20 feet agl in order to complete the mission. For these reasons THE COMPANY is requesting a waiver to the minimum altitude requirements of section 119 of part 91.</p>

VI. Benefit to Public Interest

THE COMPANY will be utilizing technology developed and manufactured in the USA, helping to advance the local UAS industry.

UAS may be used in the event that there is no other way to safely spray a certain land area. This will reduce the chance of manned aircraft attempting to spray certain dangerous areas. The result will be reduced risk for pilots and the public.

UAS are significantly smaller and lighter than manned aircraft. In the event of a crash, the UAS poses a greatly reduced threat to the public. UAS also have much smaller propellers, reducing the risk of injury to the public in the event of a crash.

UAS are much quieter than manned airplanes. UAS will create much less noise pollution than manned aircraft. This is especially important for near-urban aerial applications.

UAS use batteries for power, which is not as flammable and explosive as the fuel used for the majority of manned aircraft. In the event of a crash, there is a significant risk of explosion. There will also be a reduction in air pollution.

UAS operate at much lower altitude than manned aircraft. This vertical separation greatly reduces the chance of a mid-air collision and the following catastrophic damage to the aircraft involved, and the public.

UAS allow for methods of precision spraying that are not possible with manned aircraft. Precision spraying has the potential to increase the efficiency of US agriculture as a whole. These precision applications will greatly benefit the US farmer while operating with equivalent or greater levels of safety compared to manned aircraft.

VII. Supporting Documents

In support of this petition, we will submit the following associated documents containing confidential information. The UAS will operate only within the limitations listed in this petition and the supporting documents.

- CONOPS Manual
- Operation and Safety Manual
- Risk Assessment & Mitigation Manual
- Training Manual
- AG-122 Maintenance Manual

These additional confidential documents are not regularly available or being shared with others because they contain specific proprietary information. For these reasons we request they be handled as such under 14 CFR § 11.35(b) and protect them from release under FOIA 5 USC § 552 et seq.

VIII. Authority to Grant Petition

The Federal Aviation Act gives the FAA the authority to grant exemptions. “The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of this title if the Administrator finds the exemption in the public interest.” (49 U.S.C. § 44701(f); accord 49 U.S.C. § 44711(b).)

IX. Conclusion

THE COMPANY feels it has presented a thorough and compelling case to grant the relief requested in this petition. UAS operations conducted by THE COMPANY in the manner as outlined above will provide an equivalent level of safety as the current regulations. In order to improve the safety of aerial applications and efficiency of US farmers, THE COMPANY believes it is in the public interest to grant this waiver request without delay.

Sincerely,

Caleb Riedeman
Owner & Chief Pilot, Rock River Seed & Chemical LLC